higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

# MARKING GUIDELINE

## NATIONAL CERTIFICATE

## PRODUCTION AND QUALITY CONTROL N6

**14 November 2022**

**This marking guideline consists of 6 pages.**

Copyright reserved

## QUESTION 1: PRODUCTION AND MANAGEMENT SYSTEMS

1.1 Marketing can be defined as the process by which the demand for economic goods and services is determined in advance and satisfied by the creation and physical distribution thereof. (3)

1.2
- The well-ordered grouping of components
- The direct interactive relationships
- The sharing of an objective (3)

1.3
- It cuts down costs.
- Data are accurately collected.
- Proper coordination between subsystems is possible.
- Information is rapidly made available to management.
- It gives management insight in setting a uniform business objective. (5)

1.4
- Management
- Information
- Technology
- Capital
- Labour
- Land
- Energy
- Raw materials
- Components
- Documents
- Persons (e.g., patients)
- Environmental influences (Any 5 × 1) (5)

1.5
- Industrial engineering
- Factory layout and material handling
- Demand forecasting
- Product design
- Production planning (5)

**[21]**

## QUESTION 2: TOTAL QUALITY MANAGEMENT (TQM)

2.1
- Quality is defined by customers' requirements.
- Top management has direct responsibility for quality improvement.
- Increased quality comes from systematic analysis and improvement of work processes.
- Quality improvement is a continuous effort and conducted throughout the organisation. (8)

2.2
- Cause-and-effect diagram (also known as Fishborne or Ishakawa diagram)
- Check sheet
- Control sheet
- Histogram
- Pareto chart
- Scatter diagram
- Stratification (alternatively, flow chart or run chart) (7)

2.3 Quality is the extent to which a product or service meets the required standards or specifications as prescribed by the manufacturing or service organisation, with due allowance for consumers' expectations. (3)

2.4 Inspection merely entails measuring the quality properties of a completed product or finished operation and comparing it to the prescribed standard. (2)
**[20]**

## QUESTION 3: JUST IN TIME (JIT)

3.1
3.1.1 D
3.1.2 A
3.1.3 E
3.1.4 B
3.1.5 C
(5 × 1) (5)

3.2
- Internal setup and external setup are not distinguished
- Internal setup and external setup are distinguished
- Internal setup is converted to external setup
- Streamline all aspects of the setup (4)

3.3
- Reductions in downtime
- Reductions in inventory
- Reductions in scrap and re-work
- Reductions in workspace
- Increased inventory turns
- Increased labour utilisation
- Increased equipment utilisation
- Improved service to customers (8)

3.4
- Motivation
- Training
- Leadership (3)

**[20]**

## QUESTION 4: THEORY OF CONSTRAINTS (TOC)

4.1 The theory of constraints (TOC) is a concept that emphasises the role of constraints in limiting the performance of organisation output. (3)

4.2
- Process/organisations as chains
- Local versus system optima
- Cause and effect
- Physical versus policy constraints
- Total system impact (5)

4.3
- Five-step focusing process
- V-A-T logical structure analysis
- Drum-buffer-rope scheduling method
- Buffer management
- Supply chain management (5)

4.4
- Reductions in supply chain inventories
- Increased responsiveness and flexibility
- Improved on-time delivery performance to the final customer
- Creation of enhanced value for customers
- Improved profitability/throughput for the supply chain
- Reductions in total assets invested in the system
- Simplification of relationships as objectives are clarified
- Reductions in costs across the supply chain
- Improved competitive position (Any 7 × 1) (7)

**[20]**

## QUESTION 5: BUSINESS PROCESS RE-ENGINEERING (BPR) AND PERFORMANCE MEASUREMENT

5.1 The aim of BPR, according to Sherwood-Smith (1994), is seeking to devise new ways of organising tasks, organising people, and redesigning IT systems so that the processes support the organisation to realize its goals. (2)

5.2
- Radical change and assumption challenge
- Process and goal orientation
- Organisational re-structuring
- The exploitation of enabling technologies (4)

5.3
- Accuracy
- Integration of planning and controlling
- Control must adopt to the situation or process
- Flexibility
- Timeliness
- Comprehensibility
- Acceptability
- Ability to be implemented economically
- Objectivity
- Emphasis on the exception
- Proposed corrective action (Any 7 × 1) (7)

5.4
- Size of the enterprise
- Managerial level
- Enterprise activity
- Decentralisation
- Enterprise climate
- Importance of the activity (6)

**[19]**

**TOTAL: 100**

Copyright reserved